



May 2006

## **Washington State Transition Mathematics Project College Readiness Mathematics Standards**

### ***Master Plan Policy Proposal 8: Helping students make the transition to college***

#### **Introduction**

The Transition Mathematics Project (TMP) is a statewide public-private partnership designed to provide the information and support that students need for successful transition from secondary to postsecondary education in mathematics.

To accomplish this, the TMP has developed standards that define the math skills and knowledge high school graduates need to complete college-level coursework, meet minimum admission requirements, and avoid remediation upon enrolling in college.

#### **Relationship to Strategic Master Plan**

Section 8 of the 2004 *Strategic Master Plan for Higher Education: Helping Students Make the Transition to College* states:

*“The HECB will lead a collaborative effort with the goal of developing a definition of college readiness in the key subject areas of mathematics, science, English, social studies, world languages and the arts.”*

The HECB is part of a cross-sector management team that provides direction to the TMP and includes the State Board for Community and Technical Colleges, the Office of Superintendent of Public Instruction, and the Council of Presidents. Business and community stakeholders also participate in the project. The State Board manages the project for Community and Technical Colleges.

The HECB is leading a similar cross-sector effort to develop English and science college readiness definitions in 2005-06.

## Program Need

Forty-nine percent of high school graduates who enter Washington's two-year colleges directly after high school need to take pre-college math before they are ready for credit math courses. Studies show that American high school seniors rank near the bottom in international tests of mathematics knowledge, and more than one third rank below basic in the mathematics National Assessment of Educational Progress. In total, twenty-two percent of college freshmen need a remedial course in mathematics.

In two-year colleges the problem is even more acute: almost one-third of Washington high school graduates begin their higher education experience in two-year colleges, half of whom take pre-college (remedial) math in their first year. Even a student who passes the math portion of the Washington Assessment of Student Learning (WASL) does not necessarily have the skills needed to handle college-level math courses. The TMP is designed to help students successfully complete entry-level college mathematics without the need for remediation.

## TMP Goals

- **Increase student success** in completing math requirements in high school and college through clear standards and expectations, improved instructional course and program design, teaching methods, and classroom assessments.
- **Align standards and expectations** for mathematics including:
  - 1) Aligning eleventh- and twelfth-grade math curricula with introductory college curricula;
  - 2) Aligning high school math with placement assessments used by two-year colleges and baccalaureate institutions; and
  - 3) Aligning high school graduation requirements with college and university admission requirements.
- **Build capacity of teachers and instructors** to align curriculum and instruction to standards and expectations through improved instructional course and program design, teaching methods, and classroom assessments. Several pilot projects are underway to accomplish this, and more will continue in Phase II.
- **Communicate math expectations to students** through clear and consistent messages and focused educational advising. In particular, students (and their parents) need to understand that achieving the math standard on the WASL does not necessarily mean that students are prepared for college-level math.

## Major Accomplishments to Date

- Defined clear and consistent expectations in mathematics, with the participation of teams comprised of K-20 teachers and faculty. The standards were published in a document titled *College Readiness Mathematics Standards* and disseminated in April 2006.
- Initiated and supported variety of local/regional partnerships addressing student course-taking and achievement in math.
- Developed practical math-related messages and materials for students transitioning from high school to postsecondary education.

## Project Funding

Phase I of the TMP was funded in 2004 by the Washington State Legislature (\$300,000) and the Bill & Melinda Gates Foundation (\$423,500).

In April 2006, Phase II of the TMP was awarded \$3,600,000 by the Bill and Melinda Gates Foundation.

Also in 2006, the legislature appropriated \$275,000 for Phase II, a one-time appropriation to support the work related to placement testing and to support local/regional partnership projects in their work related to the major Phase II goals described below.

## Phase II TMP

Phase II of the Project will establish or strengthen a variety of local or regional high school/college partnerships, supported and connected by the statewide TMP consortium. The statewide portion of the project will work to leverage and disseminate successful innovations from the local partnerships and also address major issues needing a systemic response, e.g., math placement testing.

### Major goals of Phase II of the TMP are:

- Align college placement tests with the *College Readiness Mathematics Standards* and develop a strategy for math diagnostic and placement testing for Washington higher education;
- Increase curriculum alignment between high schools and colleges using the *College Readiness Mathematics Standards* as the fundamental framework;
- Develop and disseminate standards-based instructional materials (supplemental classroom tasks, assignments and assessments) built on the *College Readiness Mathematics Standards*;

- Reach more students and parents – especially those under-served by higher education – with specific and clear messages on the *College Readiness Mathematics Standards* and how to effectively use them in college and career planning; and
- Gather better information on current math curricula and student course-taking patterns and performance in high school and college math.

### **External Review/Evaluation**

In October 2005, the TMP underwent a comprehensive formative evaluation led by Washington State University's Social and Economic Sciences Research Center (WSU-SESRC). The goal of the evaluation was to tap the project's key stakeholders to identify accomplishments achieved for Phase I of the project, identify challenges, and suggest recommendations for improvement.

In sum, the most consistent, compelling and notable finding of this evaluation was that respondents were very positive in their remarks about the project. In particular, they appreciated the open communication across educational sectors that allowed them to find common ground. Respondents were uniform in their appreciation for project leaders providing space and time for face-to-face communication, to which they attached great value, both personally and professionally. They lauded the quality of the standards, which they view as well-conceived and relevant, and they have high expectations for their usefulness.

### **Staff Analysis and Recommendation**

The Transition Mathematics Project has succeeded in developing standards that describe skills and knowledge that students need to successfully complete entry-level college mathematics coursework.

Standards are clearly stated and are accompanied by attributes, components and evidence of achievement and learning that draw out what students must know to successfully complete college-level mathematics. In addition a statement on appropriate use of technology is included.

The process used to develop the standards was extensive, involving more than 250 skilled educators. K-20 educators participated in institutes, work groups, conference sessions, and content development and review teams. Cross-sector teams consisting of mathematics instructors from Washington's K-12 system, community and technical colleges, and baccalaureate institutions created the initial set of college readiness mathematics standards. Approximately 70 additional skilled and experienced educators reviewed these.

To help further the reach of the TMP, the leadership of the Washington Teachers of Teachers of Mathematics (WATOTOM) and the Washington Mathematics Association of Two-Year Colleges helped disseminate and vet the standards through their respective constituents.

Based on careful review of the *College Readiness Mathematics Standards*, and having participated in the Transition Mathematics Project as part of a management oversight team, HECB staff recommend endorsement of the standards and continued support for and involvement in Phase II of the project.

The board's Education Committee reviewed the *College Readiness Mathematics Standards* on May 15, 2006, and recommended the endorsement of the full board.

The *College Readiness Mathematics Standards* are available online at:  
[http://www.transitionmathproject.org/assets/docs/standards/crs\\_march23\\_2006.pdf](http://www.transitionmathproject.org/assets/docs/standards/crs_march23_2006.pdf)

## **RESOLUTION NO. 06-12**

WHEREAS, The Transition Mathematics Project (TMP) is a statewide public-private partnership to provide the information and support that students need for successful transition from secondary to postsecondary education in mathematics; and

WHEREAS, The HECB is part of a cross-sector management team that provides direction to the TMP and includes the State Board for Community and Technical Colleges, the Office of the Superintendent of Public Instruction, and the Council of Presidents; and

WHEREAS, The process used to develop the standards was extensive, involving more than 250 skilled educators; and

WHEREAS, The Transition Mathematics Project has succeeded in developing clearly defined standards that describe skills and knowledge that students need to successfully complete entry-level college mathematics coursework; and

WHEREAS, The standards and goals are consistent with the HECB's 2004 Strategic Master Plan strategy to Help Students Make the Transition to College;

THEREFORE, BE IT RESOLVED, That the HECB accepts the standards as outlined in the Transitions Math Project report *College Readiness Mathematics Standards* and supports continued collaboration through Phase II of the project.

Adopted:

May 25, 2006

Attest:

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Gene J. Colin, Chair

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Jesus Hernandez, Secretary